

CLAIMS

1. A method of determining whether to allow or suppress deployment of a vehicular inflatable restraint for a vehicle occupant based at least in part on an output signal of a sensor responsive to occupant weight applied to a vehicle seat,
5 the method comprising the steps of:

comparing a filtered version of said output signal to a threshold having a default value corresponding to a predetermined occupant weight under a given set of conditions;

- 10 determining a value of a parameter that affects a magnitude of said output signal;

adjusting said threshold above or below said default value when the determined parameter value is outside a predetermined range of values; and

- allowing deployment of said restraint when the filtered version of said output signal is above said threshold, and suppressing deployment of said
15 restraint when the filtered version of said output signal is below said threshold.

2. The method of Claim 1, wherein said parameter is a free mass of the vehicle occupant, the method including the steps of:

measuring a vertical acceleration of the vehicle;

- 5 determining a value of said free mass based on a variation of said output signal with respect to a variation of the measured vertical acceleration;

adjusting said threshold below said default value when the determined value of said free mass is above a predetermined range of free mass values corresponding to an average weight occupant; and

- 10 adjusting said threshold above said default value when the determined value of said free mass is below the predetermined range of free mass values.

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3. The method of Claim 2, wherein the step of determining a value of said free mass includes the steps of:

sampling output signal values and computing an average of the sampled values;

5 identifying sampled output signal values that are within a specified percentage of said average;

computing a first variance of the identified output signal values;

computing a second variance of the measured vertical acceleration; and

10 determining the value of free mass according to a ratio of the first variance and the second variance.

4. The method of Claim 2, including the steps of:

measuring a vehicle run time; and

delaying the step of determining the value of said free mass until the measured run time reaches a predetermined threshold.

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5. The method of Claim 1, wherein said vehicle seat is equipped with a seat belt for restraining said occupant, and said parameter is a tension of said seat belt, the method including the steps of:

measuring the tension of said seat belt; and

5 adjusting said threshold above said default value when the measured tension is above a predetermined normal range.

6. The method of Claim 1, wherein said parameter is a temperature of said vehicle seat, the method including the steps of:

measuring said temperature; and

5 adjusting said threshold below said default value when the measured temperature is below a predetermined normal range.

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